

SEQUENCE LISTING

(1) GENERAL INFORMATION:

(i) APPLICANT: Harpold, Michael M.  
Ellis, Stephen B.  
Brust, Paul  
Akong, Michael  
Velicelebi, Gonul

(ii) TITLE OF INVENTION: HUMAN NEURONAL NICOTINIC ACETYLCHOLINE  
RECEPTOR COMPOSITIONS AND METHODS

(iii) NUMBER OF SEQUENCES: 12

(iv) CORRESPONDENCE ADDRESS:

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(v) COMPUTER READABLE FORM:

(A) MEDIUM TYPE: Floppy disk  
(B) COMPUTER: IBM PC compatible  
(C) OPERATING SYSTEM: PC-DOS/MS-DOS  
(D) SOFTWARE: PatentIn Release #1.0, Version #1.25

(vi) CURRENT APPLICATION DATA:

(A) APPLICATION NUMBER: US 07/938,154  
(B) FILING DATE: 30-NOV-1992  
(C) CLASSIFICATION:

(vii) PRIOR APPLICATION DATA:

(A) APPLICATION NUMBER: WO PCT/US91/02311  
(B) FILING DATE: 03-APR-1991

(vii) PRIOR APPLICATION DATA:

(A) APPLICATION NUMBER: US 07/504,455  
(B) FILING DATE: 03-APR-1990

(viii) ATTORNEY/AGENT INFORMATION:

(A) NAME: Reiter, Stephen E.  
(B) REGISTRATION NUMBER: 31,192  
(C) REFERENCE/DOCKET NUMBER: P41 9380

(ix) TELECOMMUNICATION INFORMATION:

(A) TELEPHONE: 619-546-4737  
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(2) INFORMATION FOR SEQ ID NO:1:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 195 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: both  
(D) TOPOLOGY: both

(ii) MOLECULE TYPE: cDNA

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(ix) FEATURE:

- (A) NAME/KEY: misc feature
- (B) LOCATION: 1..195
- (D) OTHER INFORMATION: /note= "Human neuronal NACHR alpha-2 cDNA shown as top sequence of Fig 7A."

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1:

GCTAAACAGG AGTGGAGCGA CTACAAACTG CGCTGGAACC CCGCTGATTT TGGCAACATC	60
ACATCTCTCA GGGTCCCTTC TGAGATGATC TGGATCCCCG ACATTGTTCT CTACAACAAA	120
AATGGGGAGT TTGCAGTGAC CCACATGACC AAGGCCACC TCTTCTCCAC GGGCACTGTG	180
CACTGGGTGC CCCCC	195

(2) INFORMATION FOR SEQ ID NO:2:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 209 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: both
- (D) TOPOLOGY: both

(ii) MOLECULE TYPE: cDNA

(ix) FEATURE:

- (A) NAME/KEY: misc feature
- (B) LOCATION: 1..209
- (D) OTHER INFORMATION: /note= "Rat neuronal NACHR alpha-2 cDNA shown as the bottom nucleotide sequence in Figure 7A."

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:2:

CCAATGTCTG GCTAAAGCAG GAATGGAATG ACTACAAGCT GCGCTGGAC CCGGCTGAGT	60
TTGGCAATGT CACCTCCCTG CGCGTCCCTT CAGAGATGAT CTGGATCCCA GACATTGTCC	120
TCTACAAACAA TGCAGATGGG GAGTTGCGG TGACCCACAT GACCAAGGCT CACCTTTCT	180
TCACGGGCAC TGTGCACTGG GTGCCCCA	209

(2) INFORMATION FOR SEQ ID NO:3:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 202 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: both
- (D) TOPOLOGY: both

(ii) MOLECULE TYPE: cDNA

(ix) FEATURE:

- (A) NAME/KEY: misc feature
- (B) LOCATION: 1..202
- (D) OTHER INFORMATION: /note= "Human neuronal NACHR alpha-2 cDNA shown as top sequence in Fig 7B."

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(xi) SEQUENCE DESCRIPTION: SEQ ID NO:3:

CCCCCTCGAC CAGCAGAACT GCAAGATGAA GTTTGGCTCC TGGACTTATG ACAAGGCCAA	60
GATCGACCTG GAGCAGATGG AGCAGACTGT GGACCTGAAG GACTACTGGG AGAGCGGCCGA	120
GTGGGCCATC GTCAATGCCA CGGGCACCTA CAACAGCAAG AAGTACGACT GCTGCGCCGA	180
GATCTACCCC GACGTCACCT AG	202

(2) INFORMATION FOR SEQ ID NO:4:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 250 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: both
- (D) TOPOLOGY: both

(ii) MOLECULE TYPE: cDNA

(ix) FEATURE:

- (A) NAME/KEY: misc\_feature
- (B) LOCATION: 1..250
- (D) OTHER INFORMATION: /note= "Rat neuronal NACHR alpha-2 cDNA shown as bottom sequence in Fig 7B."

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:4:

CCCCCTCGAC CAGCAGAACT GCAAGATGAA GTTTGGCTCC TGGACATATG ACAAGGCCAA	60
GATCGATCTG GAGCAGATGG AGAGGACAGT GGACCTGAAG GACTACTGGG AGAGTGGCGA	120
GTGGGCCATT ATCAATGCCA CGGAAACCTA TAACAGTAAG AAGTACGACT GCTGCGCCGA	180
GATCTACCCC GATGTCACCT ACTACTTGT GATCCGGCGG CTGCCGCTGT TCTATACCAT	240
CAACCTCATC	250

(2) INFORMATION FOR SEQ ID NO:5:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 278 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: both
- (D) TOPOLOGY: both

(ii) MOLECULE TYPE: cDNA

(ix) FEATURE:

- (A) NAME/KEY: misc\_feature
- (B) LOCATION: 1..278
- (D) OTHER INFORMATION: /note= "Human neuronal NACHR alpha-3 cDNA shown as top sequence in Fig 8A."

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:5:

CTGGCAGCAG AGGCTGAGCA CCGTCTATTT GAGCGGCTGT TTGAAGATTA CAATGAGATC	60
ATCCGGCCTG TAGCCAACGT GTCTGACCCA GTCATCATCC ATTCGAGGT GTCCATGTCT	120
CAGCTGGTGA AGGTGGATGA AGTAAACCAAG ATCATGGAGA CCAACCTGTG GCTCAAGCAA	180
ATCTGGAATG ACTACAAGCT GAAAGTGGAAC CCCTCTGACT ATGGTGGGGC AGAGTTCATG	240
CGTGTCCCTG CACAGAAGAT CTGGAAGCCA GACATTGT	278

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(2) INFORMATION FOR SEQ ID NO:6:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 300 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: both
- (D) TOPOLOGY: both

(ii) MOLECULE TYPE: cDNA

(ix) FEATURE:

- (A) NAME/KEY: misc feature
- (B) LOCATION: 1..300
- (D) OTHER INFORMATION: /note= "Rat neuronal NACHR alpha-3 cDNA shown as bottom sequence of Fig 8A."

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:6:

GATGCTGCTG CCAGCGGCCA GTGCCTCAGA AGCTGAGCAC CGCCTGTTCC AGTACCTGTT	60
CGAAGATTAC AACGAGATCA TCCGGCCAGT GGCTAATGTG TCCCCATCCAG TCATCATCCA	120
GTTTGAGGTG TCCATGTCTC AGCTGGTGAA GGTGGATGAA GTAAACCAGA TCATGGAAAC	180
CAACCTGTGG CTGAAGCAAA TCTGGAATGA CTACAAGCTG AAATGAAAC CCTCTGACTA	240
CCAAGGGGTG GAGTCATGC GTGTTCTGC AGAGAAGATC TGGAAACCAG ACATCGTACT	300

(2) INFORMATION FOR SEQ ID NO:7:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 305 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: both
- (D) TOPOLOGY: both

(ii) MOLECULE TYPE: cDNA

(ix) FEATURE:

- (A) NAME/KEY: misc feature
- (B) LOCATION: 1..305
- (D) OTHER INFORMATION: /note= "Human neuronal NACHR alpha-3 cDNA shown as top sequence in Fig 8B."

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:7:

TTCCAGGTGG ACGACAAGAC CAAAGCCTTA CTCAAGTACA CTGGGGACGT GACTTGGATA	60
CCTCCGGCCA TCTTTAAGAG CTCCTGTAAA ATCGACGTGA CCTACTTCCC GTTTGATTAC	120
CAAAACTGTA CCATGAAGTT CGGTTCCCTGG TCCTACGATA AGGCGAAAAT CGATCTGGTC	180
CTGATCGGCT CTTCCATGAA CCTCAAGGAC TATTGGGAGA GCGGGGAGTG GGCCATCATC	240
AAAGCCCCAG GCTACAAACA CGACATCAAG TACAACGTGCT GCGAGGAGAT CTACCCGAC	300
ATCAC	305

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(2) INFORMATION FOR SEQ ID NO:8:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 350 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: both
- (D) TOPOLOGY: both

(ii) MOLECULE TYPE: cDNA

(ix) FEATURE:

- (A) NAME/KEY: misc feature
- (B) LOCATION: 1..350
- (D) OTHER INFORMATION: /note= "Rat neuronal NACHR alpha-3 cDNA shown as bottom sequence in Fig 8B."

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:8:

GTACAACAAAC GCTGATGGGG ATTTCCAGGT GGATGACAAG ACCAAAGCTC TACTCAAGTA 60  
CACAGGAGAA GTGACTTGGG TCCCGCCGGC CATCTTAAG AGCTCATGCA AAATCGACGT 120  
GACCTACTTC CCATTCGACT ACCAAAAGTG CACCATGAAG TTCGGCTCCT GGTCTACGA 180  
CAAGGCAAAG ATCGACCTGG TCCTCATCGG CTCCTCCATG AACCTCAAGG ACTACTGGGA 240  
GAGTGGCGAG TGGGCTATCA TTAAAGCCCC GGGCTACAAA CATGAAATCA AGTACAACGT 300  
CTGTGAGGAG ATCTACCAAG ACATCACGTA CTCGCTGTAC ATCCGTCGCC 350

(2) INFORMATION FOR SEQ ID NO:9:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 1521 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: both
- (D) TOPOLOGY: both

(ii) MOLECULE TYPE: cDNA

(ix) FEATURE:

- (A) NAME/KEY: misc feature
- (B) LOCATION: 1..1521
- (D) OTHER INFORMATION: /note= "Human neuronal NACHR beta-2 cDNA shown as top sequence in Fig 9."

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:9:

ATGCCCGCTG GCATGGCCCG GCGCTGCCGC CCCGTGGCGC TGCTCCTTGG CTTCGGCCTC 60  
CTCCGGCTGT GCTCAGGGT GTGGGGTACG GATACAGAGG AGCGGCTGGT GGAGCATCTC 120  
CTGGATCCTT CCCGCTACAA CAAGCTTATC CGCCCAAGCCA CCAATGGCTC TGAGCTGGTG 180  
ACAGTACAGC TTATGGTGTC ACTGGCCAG CTCATCAGTG TGCAAGAGCG GGAGCAGATC 240  
ATGACCACCA ATGTCTGGCT GACCCAGGAG TGGGAAGATT ATCGCCTCAC CTGGAAGCCT 300  
GAAGAGTTTG ACAACATGAA GAAAGTCGG CTCCCTTCCA AACACATCTG GCTCCCAGAT 360  
GTGGTCCTGT ACAACAATGC TGACGGCATG TACGAGGTGT CCTTCTATTG CAATGCCGTG 420  
GTCTCCTATG ATGGCAGCAT CTTCTGGCTG CCGCCTGCCA TCTACAAGAG CGCATGCAAG 480

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ATTGAAGTAA AGCACTTCCC ATTTGACCAG CAGAACTGCA CCATGAAGTT CCGTTCGTGG 540  
ACCTACGACC GCACAGAGAT CGACTTGGTG CTGAAGAGTG AGGTGGCCAG CCTGGACGAC 600  
TTCACACCTA GTGGTGAGTG GGACATCGTG GCGCTGCCGG GCCGCGGCAA CGAGAACCCC 660  
GACGACTCTA CGTACGTGGA CATCACGTAT GACTTCATCA TTCGCCGCAA GCCGCTCTTC 720  
TACACCATCA ACCTCATCAT CCCCTGTGTG CTCATCACCT CGCTAGCCAT CCTTGTCTTC 780  
TACCTGCCAT CCGACTGTGG CGAGAAGATG ACGTTGTGCA TCTCAGTGCT GCTGGCGCTC 840  
ACGGTCTTCC TGCTGCTCAT CTCCAAGATC GTGCCCTCCA CCTCCCTCGA CGTGCCGCTC 900  
GTCGGCAAGT ACCTCATGTT CACCATGGTG CTTGTCACCT TCTCCATCGT CACCAGCGTG 960  
TGCCTGCTCA ACGTGCACCA CCGCTCGCCC ACCACGCACA CCATGGCGCC CTGGGTGAAG 1020  
GTCGTCTTCC TGGAGAAGCT GCCCGCGCTG CTCTTCATGC AGCAGCCACG CCATCATTGC 1080  
GCCCGTCAGC GCCTGCGCCT GCGGCGACGC CAGCGTGAGC GCGAGGGCGC TGGAGCCCTC 1140  
TTCTTCCGCG AAGCCCCAGG GGCGACTCC TGCACGTGCT TCGTCAACCG CGCGTCGGTG 1200  
CAGGGGTTGG CGGGGGCCTT CGGGGCTGAG CCTGCACCAG TGGCGGGCCC CGGGCGCTCA 1260  
GGGGAGCCGT GTGGCTGTGG CCTCCGGAG GCGGTGGACCG GCGTGCCTT CATCGCAGAC 1320  
CACATGCGGA GCGAGGACGA TGACCAGAGC GTGAGTGAGG ACTGGAAGTA CGTCGCCATG 1380  
GTGATCGACC GCCTCTTCCCT CTGGATCTTT GTCTTTGTCT GTGTCTTGG CACCATCGGC 1440  
ATGTTCCCTGC AGCCTCTCTT CCAGAACTAC ACCACCACCA CCTTCCTCCA CTCAGACCAC 1500  
TCAGCCCCCA GCTCCAAGTG A 1521

*b1*  
*cont.*  
(2) INFORMATION FOR SEQ ID NO:10:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 1512 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: both
- (D) TOPOLOGY: both

(ii) MOLECULE TYPE: cDNA

(ix) FEATURE:

- (A) NAME/KEY: misc\_feature
- (B) LOCATION: 1..1512
- (D) OTHER INFORMATION: /note= "Rat neuronal NACHR beta-2 cDNA shown as bottom nucleotide sequence in Figure 9."

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:10:

ATGCTGGCTT GCATGGCCGG GCACTCCAAC TCAATGGCGC TGTTCAGCTT CAGCCTCTT 60  
TGGCTGTGCT CAGGGTTTT GGGAACTGAC ACAGAGGAGC GGCTAGTGGA GCATCTCTTA 120  
GATCCCTCCC GCTATAACAA GCTGATTGCT CCAGCTACTA ACGGCTCTGA GCTGGTGACT 180  
GTACAGCTCA TGGTATCATT GGCTCAGCTC ATTAGTGTGC ACGAGCGGGGA GCAGATCATG 240  
ACCACCAATG TCTGGCTGAC CCAGGAGTGG GAAGATTACC GCCTCACATG GAAGCCTGAG 300

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GACTTCGACA ATATGAAGAA AGTCCGGCTC CCTTCCAAAC ACATCTGGCT CCCAGATGTG 360  
GTTCTATACA ACAATGCTGA CGGCATGTAC GAAGTCTCCT TCTATTCAA TGCTGTGGTC 420  
TCCTATGATG GCAGCATCTT TTGGCTACCA CCTGCCATCT ACAAGAGTGC ATGCAAGATT 480  
GAGGTGAAGC ACTTCCCATT TGACCAGCAG AATTGCACCA TGAAGTTTCG CTCATGGACC 540  
TACGACCGTA CTGAGATTGA CCTGGTGCTC AAAAGTGTATG TGGCCAGTCT GGATGACTTC 600  
ACACCCAGCG GGGAGTGGGA CATCATCGCA CTGCCAGGCC GACGCAACGA GAACCCAGAC 660  
GACTCCACCT ATGTGGACAT CACCTATGAC TTCATCATTC GTCGCAAACC ACTCTTCTAC 720  
ACTATCAACC TCATCATCCC CTGCGTACTC ATCACCTCGC TGGCCATCCT GGTCTTCTAC 780  
CTGCCCTCAG ACTGTGGTGA AAAGATGACA CTTTGTATTT CTGTGCTGCT AGCACTCACG 840  
GTGTTCCCTGC TGCTCATCTC CAAGATTGTG CCTCCCACCT CCCTCGATGT ACCGCTGGTG 900  
GGCAAGTACC TCATGTTAC CATGGTGCTA GTCACCTTCT CCATCGTCAC CAGCGTGTGT 960  
GTGCTCAATG TGCACCACCG CTCGCCTACC ACGCACACCA TGGCCCCCTG GGTCAAGGTG 1020  
GTCTTCCTGG AGAAGCTGCC CACCCCTGCTC TTCCTGCAGC AGCCACGCCA CCGCTGTGCA 1080  
CGTCAGCGTC TGCCTTGAG GAGGCGCCAG CGAGAGCGTG AGGGCGAGGC GGTTTTCTTC 1140  
CGTGAAGGTC CTGCGGCTGA CCCATGTACC TGCTTGTC ACCCTGCATC AGTGCAGGGC 1200  
TTGGCTGGGG CTTTCCGAGC TGAGCCCCT GCAGCCGGCC CGGGCGCTC TGTGGGGCCA 1260  
TGCAGCTGTG GCCTCCGGGA AGCAGTGGAT GGCCTACGCT TCATTGCGGA CCACATGCGA 1320  
AGTGAGGATG ATGACCAAGAG TGTGAGGGAG GACTGGAAAT ACGTTGCCAT GGTGATCGAC 1380  
CGCCTGTTCC TGTGGATCTT TGTCTTGTC TGTGTCTTG GGACCGTCGG CATGTTCCCTG 1440  
CAGCCTCTCT TCCAGAACTA CACTGCCACT ACCTTCCCTCC ACCCTGACCA CTCAGCTCCC 1500  
AGCTCCAAGT GA 1512

(2) INFORMATION FOR SEQ ID NO:11:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 21 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:11:

AGCTTTCGAT ATCAGAATTC G

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(2) INFORMATION FOR SEQ ID NO:12:

(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 21 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:12:

AGCTCGAATT CTGATATCGA A

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